

## WHAT IS CLAIMED IS:

1. A hand vacuum cleaner with nozzle width adjustable and built-in hose is essentially comprised of a vacuum cleaner, a primary nozzle and one set or two set of expanded nozzle,  
5 wherein,  
the vacuum cleaner including a dust receiver, an opening 18 being provided at the front end of the dust receiver to accommodate the assembly of the primary nozzle and the expanded nozzle, a retainer is each provided to both sides of  
10 the inner wall and the bottom of the opening, a holder containing a release key being provided to the dust receiver at the top of the opening, and an inner sleeve extending from the inner wall of the opening in the dust receiver;  
the primary nozzle related to a narrow one, having at its  
15 terminal connected to the built-in hose, the hose being compressed and stored in the inner sleeve of the dust receiver 11, and a positioning structure of matching hooks being respectively provided to the top of the primary nozzle and to the release key; and  
20 the expanded nozzle provided alone on either side or each provided on both sides of the primary nozzle being comprised of a slider and a connector inserted to each other by sliding, a coil being planted at where between the slider and the connector movably in the opening of the dust receiver, the  
25 slider being respectively formed with the holder and the release key a positioning structure by means of matching

hooks; and the slider expanding or retreating by the load released from or the compression by the coil is characterized by that:

when assembled, the slider retreating and being positioned in  
5 the holder by the hook bit, the release key when first compressed pushing against the slider, the coil releasing its load, the slider in turn releasing outwardly the connector to widen up the nozzle, the release key being compressed once again to push against the primary nozzle to automatically eject  
10 the primary nozzle and the hose.

2. A hand vacuum cleaner with nozzle width adjustable and built-in hose as claimed in Claim 1, wherein, a through hole being each provided on both sides of the holder, a retainer being each provided to both sidewalls, a through hole being  
15 provided at the lower end of the holder, a hook being each provided to both outer wall of the release key, a first plunger to release the expanded nozzle and a second plunger to release the primary nozzle being provided at a predetermined location, and a return coil being planted in the release key.

20 3. A hand vacuum cleaner with nozzle width adjustable and built-in hose as claimed in Claim 2, wherein, a reinforcement rib is connected at where between the first plunger of the release key and the inner wall of the release key.

4. A hand vacuum cleaner with nozzle width adjustable and  
25 built-in hose as claimed in Claim 1, wherein, multiple matching hooks are used to assemble the slider and the connector.

5. A hand vacuum cleaner with nozzle width adjustable and built-in hose as claimed in Claim 1, wherein, multiple matching hook bits extending from the slider and the connector are used to define relative retainers for the slider and the connector, and another end of the hook bit provided to the connector defines a limiting retainer together with the retainer from the inner wall of the opening.
6. A hand vacuum cleaner with nozzle width adjustable and built-in hose as claimed in Claim 5, wherein, the hook bit blocks out the sidewall of the primary nozzle when the slider is retracted.
7. A hand vacuum cleaner with nozzle width adjustable and built-in hose as claimed in Claim 1, wherein, a hook bit and a matching groove are respectively provided to the slider and the connector to define a positioning retainer when the hook bit sliding in the groove to its extreme.
8. A hand vacuum cleaner with nozzle width adjustable and built-in hose as claimed in Claim 1, wherein, a recess is provided to the bottom of the slider to define a retainer jointly with the retainer provided at the bottom of the opening when the slider moves to expand the nozzle.
9. A hand vacuum cleaner with nozzle width adjustable and built-in hose as claimed in Claim 8, wherein, a limit ring being inserted to the terminal of the hose, a gradation being provided at the front end of the wall of the inner sleeve, a retainer ring being locked to the terminal of the wall of the sleeve, and the limiting ring defining respectively with the

gradation or the retainer ring a limiting retainer when the hose retracts or expands.

10. A hand vacuum cleaner with nozzle width adjustable and built-in hose as claimed in Claim 1, wherein, a positioning grain is provided on the top of the primary nozzle to be inserted in the through hole provided at the lower end of the holder and positioned therein when the hose being compressed and stored in the inner sleeve.

11. A hand vacuum cleaner with nozzle width adjustable and built-in hose as claimed in Claim 1, wherein, one end of the coil provided between the slider and the connector holds against an inner rod in the dust receiver and penetrates through the connector for the other end of the coil to hold against the slider.

12. A hand vacuum cleaner with nozzle width adjustable and built-in hose as claimed in Claim 1, wherein, the hose is related to a flexible hose to extend for a longer hose when released by ejection.

13. A hand vacuum cleaner with nozzle width adjustable and built-in hose as claimed in Claim 1, wherein, the expanded nozzle is comprised of multiple connectors inserted to one another in series.

14. A hand vacuum cleaner with nozzle width adjustable provided on either side or on both sides of a narrow primary nozzle of the vacuum cleaner one set or two sets of expanded nozzle is characterized by that each set of the expanded nozzle being comprised of a slider and a connector inserted to each other by

sliding, the primary nozzle being narrow in normal condition when the slider retreated to be inserted into the connector, and becoming wider when both of the slider and the connector outwardly stretched away from each other.

5 15. A hand vacuum cleaner with nozzle width adjustable and built-in hose as claimed in Claim 14, wherein, the vacuum cleaner including a dust receiver, an opening 18 being provided at the front end of the dust receiver to accommodate the assembly of the primary nozzle and the expanded nozzle,  
10 a retainer is each provided to both sides of the inner wall and the bottom of the opening, a holder containing a release key being provided to the dust receiver at the top of the opening, and an inner sleeve extending from the inner wall of the opening in the dust receiver; and a coil being planted at where  
15 between the slider and the connector movably in the opening of the dust receiver, the slider being respectively formed with the holder and the release key a positioning structure by means of matching hooks.

16. A hand vacuum cleaner with nozzle width adjustable and  
20 built-in hose as claimed in Claim 15, wherein, a through hole being each provided on both sides of the holder, a retainer being each provided to both sidewalls, a through hole being provided at the lower end of the holder, a hook being each provided to both outer wall of the release key, a first plunger  
25 to release the expanded nozzle and a second plunger to release the primary nozzle being provided at a predetermined location, and a return coil being planted in the release key.

17. A hand vacuum cleaner with nozzle width adjustable and built-in hose as claimed in Claim 16, wherein, a reinforcement rib is connected at where between the first plunger of the release key and the inner wall of the release key.
- 5 18. A hand vacuum cleaner with nozzle width adjustable and built-in hose as claimed in Claim 14, wherein, multiple matching hooks are used to assemble the slider and the connector.
- 10 19. A hand vacuum cleaner with nozzle width adjustable and built-in hose as claimed in Claim 14, wherein, wherein, multiple matching hook bits extending from the slider and the connector are used to define relative retainers for the slider and the connector, and another end of the hook bit provided to the connector defines a limiting retainer together with the
- 15 retainer from the inner wall of the opening.
20. A hand vacuum cleaner with nozzle width adjustable and built-in hose as claimed in Claim 14, wherein, a hook bit and a matching groove are respectively provided to the slider and the connector to define a positioning retainer when the hook
- 20 bit sliding in the groove to its extreme.
21. A hand vacuum cleaner with nozzle width adjustable and built-in hose as claimed in Claim 14, wherein, a recess is provided to the bottom of the slider to define a retainer jointly with the retainer provided at the bottom of the opening when
- 25 the slider moves to expand the nozzle.
22. A hand vacuum cleaner with nozzle width adjustable and built-in hose as claimed in Claim 15, wherein, one end of the

coil provided between the slider and the connector holds against an inner rod in the dust receiver and penetrates through the connector for the other end of the coil to hold against the slider.

5 23. A hand vacuum cleaner with nozzle width adjustable and built-in hose as claimed in Claim 14, wherein, the expanded nozzle is comprised of multiple connectors inserted to one another in series.

24. A hand vacuum cleaner with built-in hose is characterized by  
10 that an inner sleeve being provided inside a dust receiver of the vacuum cleaner, the built-in hose being connected to a primary nozzle of the vacuum cleaner, the hose related to a flexible hose being compressed and stored in the inner sleeve, a release key being provided in the dust receiver at where in  
15 relation to the primary nozzle, a positioning structure made of matching hooks being provided for the release key at where in relation with the primary nozzle, and the release key when compressed triggering off the matching hooks for the hose to be ejected and released from the inner sleeve.